

**CLAIMS**

What is claimed is:

1. In a satellite communication system comprising a satellite arranged to receive data carried by an uplink signal having a received power and a transmitter arranged to transmit said uplink signal at a transmit power, an uplink power control method comprising:

comparing the received power of at least a portion of said uplink signal with a power threshold;

adjusting the transmit power at least in part in response to said comparing; determining errors in said data; and

adjusting said power threshold in response to said determined errors.

2. In a satellite communication system comprising a satellite arranged to receive data carried by an uplink signal having a received power and a transmitter arranged to transmit said uplink signal at a transmit power, an uplink power control method comprising:

comparing the received power of at least a portion of said uplink signal with a power threshold;

adjusting the transmit power at least in part in response to said comparing; determining errors in said data;

adjusting said power threshold in response to said determined errors; and

adjusting said transmit power at least in part in response to said determined errors in said data.

3. In a satellite communication system comprising a satellite arranged to receive data of a first type and a second type carried by an uplink signal having a received power and a transmitter arranged to transmit said uplink signal at a transmit power formed by a reference power combined with an offset power, an uplink power control method comprising:

comparing the received power of at least a portion of said uplink signal with a power threshold;

adjusting the offset power of said transmit power at least in part in response to said comparing;

determining errors in said first and second types of data;

adjusting said power threshold in response to said determined errors;

and

adjusting the offset power of said transmit power to a first value in response to determined errors in said first type of data and adjusting said offset power to a second value in response to determined errors in said second type of data.

4. A method, as claimed in claim 3, wherein said adjusting said offset power comprises addressing a look up table.

5. A method, as claimed in claim 1, wherein said determining errors comprises:

determining error counts of said errors;

determining an average error rate in response to said error counts; and  
adjusting said power threshold in response to said average error rate.

6. A method, as claimed in claim 5, wherein said uplink signal comprises transmit of a plurality of data signals and wherein determining an average error rate comprises:

determining a total number of errors by summing said error counts for said plurality of data signals; and

dividing the total number of errors by the number of data signals in said plurality of data signals.

7. A method, as claimed in claim 1, wherein said transmit of said uplink signal comprises transmit of a synchronization signal and transmit of a data signal carrying said data and wherein said comparison is made using said synchronization signal.

8. Uplink power control apparatus for use in a satellite communication system of the type where a satellite receives data carried by an uplink signal having a received power, comprising:

a transmitter arranged to transmit said uplink signal at a transmit power;  
and

a processor arranged to make a comparison of the received power of at least a portion of said uplink signal with a power threshold, adjust the transmit power at least in part in response to said comparison, determine errors in said data and adjust said power threshold in response to said determined errors.

9. Apparatus, as claimed in claim 8, wherein said processor further is arranged to adjust said transmit power at least in part in response to said determined errors.

10. Uplink power control apparatus for use in a satellite communication system of the type where a satellite receives data carried by an uplink signal having a received power, comprising:

a transmitter arranged to transmit said uplink signal at a transmit power comprising a reference power combined with an offset power; and

a processor arranged to make a comparison of the received power of at least a portion of said uplink signal with a power threshold, adjust the transmit power at least in part in response to said comparison, determine errors in said data and adjust said offset power of said power threshold in response to said determined errors.

11. Uplink power control apparatus for use in a satellite communication system of the type where a satellite receives first and second types of data carried by an uplink signal having a received power, comprising:

a transmitter arranged to transmit said uplink signal at a transmit power comprising a reference power combined with an offset power; and

a processor arranged to make a comparison of the received power of at least a portion of said uplink signal with a power threshold, adjust the offset power to a first value in response to said first type of data and to adjust said offset power to a second value in response to said second type of data, determine errors in said data

and adjust said power threshold in response to said determined errors. and wherein said one or more processors are arranged to adjust said.

12. Apparatus, as claimed in claim 11, wherein said processor is arranged to adjust said offset power by addressing a look up table.

13. Apparatus, as claimed in claim 11, including a network control center and wherein the processor arranged to determine errors is located in said network control center.

14. Apparatus, as claimed in claim 8, wherein said processor is arranged to:  
determine error counts of said errors;  
determine an average error rate in response to said error counts; and  
adjust said power threshold in response to said average error rate.

15. Apparatus, as claimed in claim 14, wherein said uplink signal comprises a plurality of data signals and wherein said processor is arranged to:

determine a total number of errors by summing said error counts for said plurality of data signals; and

divide the total number of errors by the number of data signals in said plurality of data signals.

16. Apparatus, as claimed in claim 8, wherein said transmitter is arranged to transmit a synchronization signal and to transmit a data signal carrying said data and wherein said comparison is made using said synchronization signal.

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